

PENDING CLAIMS

U.S. Application No.: 09/569,380 *michele*
Filed: May 11, 2000

COJK Reference No.: WEYE-1-14244

1. An absorbent composite comprising a core and a fibrous stratum, the core and stratum being integrally formed;
wherein the stratum and a surface of the core are coextensive,
wherein the core comprises a fibrous matrix and absorbent material,
wherein the fibrous matrix defines voids and passages between voids distributed substantially throughout the matrix,
wherein the absorbent material is located within some of the voids; and
wherein the absorbent material located within the voids is expandable into the voids.
2. The composite of Claim 1 wherein the fibrous matrix comprises fibers selected from the group consisting of resilient fibers, matrix fibers, and mixtures thereof.
3. The composite of Claim 2 wherein the resilient fibers are selected from the group consisting of chemically stiffened fibers, anfractuous fibers, chemithermomechanical pulp fiber, prehydrolyzed kraft pulp fibers, synthetic fibers, and mixtures thereof.
4. The composite of Claim 3 wherein the chemically stiffened fibers comprise crosslinked cellulosic fibers.

5. The composite of Claim 3 wherein the synthetic fibers are selected from the group consisting of polyolefin, polyester, and polyamide fibers.
6. The composite of Claim 5 wherein the polyester fibers are polyethylene terephthalate fibers.
7. The composite of Claim 1 wherein the matrix fibers comprise cellulosic fibers.
8. The composite of Claim 2 wherein the resilient fibers are present in the composite in an amount from about 5 to about 60 percent by weight of the total composite.
9. The composite of Claim 2 wherein the matrix fibers are present in the composite in an amount from about 10 to about 60 percent by weight of the total composite.
10. The composite of Claim 1 wherein the absorbent material is a superabsorbent material.
11. The composite of Claim 1 wherein the absorbent material is present in an amount from about 2 to about 80 percent by weight of the total composite.
12. The composite of Claim 1 further comprising a wet strength agent.

13. The composite of Claim 12 wherein the wet strength agent is a resin selected from the group consisting of polyamide-epichlorohydrin and polyacrylamide resins.

14. The composite of Claim 12 wherein the wet strength agent is present in the composite in an amount from about 0.01 to about 2 percent by weight of the total composite.

15. The composite of Claim 1 wherein the composite is formed by a wetlaid process.

16. The composite of Claim 1 wherein the composite is formed by a foam process.

17. A wetlaid absorbent composite comprising a core and a fibrous stratum, the core and stratum being integrally formed;

wherein the stratum and a surface of the core are coextensive,

wherein the core comprises a fibrous matrix and absorbent material,

wherein the fibrous matrix defines voids and passages between voids distributed substantially throughout the matrix,

wherein the absorbent material is located within some of the voids; and

wherein the absorbent material located within the voids is expandable into the voids.

18. The composite of Claim 17 wherein the fibrous matrix comprises crosslinked cellulosic fibers.

19. The composite of Claim 17 wherein the absorbent material is a superabsorbent material.

20. The composite of Claim 17 further comprising a wet strength agent.

21. A foam-formed absorbent composite comprising a core and a fibrous stratum, the core and stratum being integrally formed;

wherein the stratum and a surface of the core are coextensive,

wherein the core comprises a fibrous matrix and absorbent material,

wherein the fibrous matrix defines voids and passages between voids distributed substantially throughout the matrix,

wherein the absorbent material is located within some of the voids; and

wherein the absorbent material located within the voids is expandable into the voids.

22. The composite of Claim 21 wherein the fibrous matrix comprises crosslinked cellulosic fibers

23. The composite of Claim 21 wherein the absorbent material is a superabsorbent material.

24. The composite of Claim 21 further comprising a wet strength agent.

25. An absorbent composite comprising a core and first and second fibrous strata, the core and strata being integrally formed;

wherein the core is intermediate the first and second strata;

wherein the first and second strata are coextensive with opposing surfaces of the core,

wherein the core comprises a fibrous matrix and absorbent material,

wherein the fibrous matrix defines voids and passages between voids distributed substantially throughout the matrix,

wherein the absorbent material is located within some of the voids; and

wherein the absorbent material located within the voids is expandable into the voids.

26. The composite of Claim 25 wherein the fibrous matrix comprises crosslinked cellulosic fibers

27. The composite of Claim 25 wherein the absorbent material is a superabsorbent material.

28. The composite of Claim 25 further comprising a wet strength agent.

29. The composite of Claim 25 wherein the core and strata are formed from a common fiber furnish.

30. The composite of Claim 25 wherein the core and one stratum are formed from a common fiber furnish.

31. The composite of Claim 25 wherein the core and strata are formed from different fiber furnishes.

32. The composite of Claim 25 wherein the first and second strata are formed from a common fiber furnish.

33. The composite of Claim 25 wherein the first and second strata are formed from different fiber furnishes.

34. The composite of Claim 25 wherein the core has a basis weight that is different from the basis weight of the stratum.

35. The composite of Claim 25 wherein the first stratum has a basis weight that is different from the basis weight of the second stratum.

36. The composite of Claim 25 wherein the first and second strata have the same basis weight.

37. A wetlaid absorbent composite comprising a core and first and second fibrous strata, the core and strata being integrally formed;

wherein the core is intermediate the first and second strata;

wherein the first and second strata are coextensive with opposing surfaces of the core,

wherein the core comprises a fibrous matrix and absorbent material,

wherein the fibrous matrix defines voids and passages between voids distributed substantially throughout the matrix,

wherein the absorbent material is located within some of the voids; and
wherein the absorbent material located within the voids is expandable into the
voids.

38. A foam-formed absorbent composite comprising a core and first and
second fibrous strata, the core and strata being integrally formed;

wherein the core is intermediate the first and second strata;

wherein the first and second strata are coextensive with opposing surfaces of the
core,

wherein the core comprises a fibrous matrix and absorbent material,

wherein the fibrous matrix defines voids and passages between voids distributed
substantially throughout the matrix,

wherein the absorbent material is located within some of the voids; and

wherein the absorbent material located within the voids is expandable into the
voids.

39. An absorbent composite comprising a core and at least one fibrous
stratum, wherein the at least one fibrous stratum and a surface of the core are
coextensive, wherein the composite has an edgewise ring crush value in the range from
about 400 to about 1600 grams and a basis weight in the range from about 250 to about
650 gsm.

40. The composite of Claim 39, wherein the absorbent material is present in an amount from about 2 to about 80 percent by weight based on the total weight of the composite.

41. The composite of Claim 39, wherein the fibrous matrix comprises crosslinked cellulosic fibers in an amount from about 5 to about 60 percent by weight based on the total weight of the composite.

42. The composite of Claim 39, wherein the fibrous matrix comprises matrix fibers in an amount from about 10 to about 60 percent by weight based on the total weight of the composite.

43. The composite of Claim 39, wherein the absorbent material is present in about 50 percent by weight based on the total weight of the composite, wherein the fibrous matrix comprises crosslinked fibers present in about 25 percent by weight based on the total weight of the composite and matrix fibers present in about 25 percent by weight based on the total weight of the composite.

44. An absorbent composite comprising absorbent material in a fibrous matrix,

wherein the absorbent material is present in the composite in an amount from about 40 to about 80 percent by weight based on the total weight of the composite;

wherein the fibrous matrix comprises crosslinked cellulosic fibers and matrix fibers;

wherein the weight ratio of crosslinked fibers to matrix fibers is at least about 1:1.

45. The composite of Claim 44, wherein the weight ratio of crosslinked fibers to matrix fibers is at least about 2:1.

46. The composite of Claim 44, wherein the weight ratio of crosslinked fibers to matrix fibers is at least about 3:1.

101. An absorbent article incorporating the composite of Claim 1.

102. The absorbent article of Claim 101 wherein the article is at least one of a diaper, a feminine care product, and an adult incontinence product.

103. An absorbent article incorporating the composite of Claim 17.

104. The absorbent article of Claim 103 wherein the article is at least one of a diaper, a feminine care product, and an adult incontinence product.

105. An absorbent article incorporating the composite of Claim 21.

106. The absorbent article of Claim 105 wherein the article is at least one of a diaper, a feminine care product, and an adult incontinence product.

107. An absorbent article incorporating the composite of Claim 25.

108. The absorbent article of Claim 107 wherein the article is at least one of a diaper, a feminine care product, and an adult incontinence product.

109. An absorbent article incorporating the composite of Claim 37.
110. The absorbent article of Claim 109 wherein the article is at least one of a diaper, a feminine care product, and an adult incontinence product.
111. An absorbent article incorporating the composite of Claim 38.
112. The absorbent article of Claim 111 wherein the article is at least one of a diaper, a feminine care product, and an adult incontinence product.
113. An absorbent article incorporating the composite of Claim 39.
114. The absorbent article of Claim 113 wherein the article is at least one of a diaper, a feminine care product, and an adult incontinence product.
115. An absorbent composite comprising a core and a fibrous stratum, the core and stratum being integrally formed;
 - wherein the stratum and a surface of the core are coextensive,
 - wherein the core comprises a fibrous matrix and absorbent material,
 - wherein the fibrous matrix defines voids and passages between voids distributed substantially throughout the matrix,
 - wherein the absorbent material is located within some of the voids; and
 - wherein the absorbent material located within the voids is expandable into the voids, and

wherein the composite has a demand absorbency of from about 15 to about 35 mL/g.

116. The composite of Claim 115, wherein the fibrous matrix comprises fibers selected from the group consisting of resilient fibers, matrix fibers, and mixtures thereof.

117. The composite of Claim 116, wherein the resilient fibers are selected from the group consisting of chemically stiffened fibers, anfractuous fibers, chemithermomechanical pulp fiber, prehydrolyzed kraft pulp fibers, synthetic fibers, and mixtures thereof.

118. The composite of Claim 117, wherein the chemically stiffened fibers comprise crosslinked cellulosic fibers.

119. The composite of Claim 117, wherein the synthetic fibers are selected from the group consisting of polyolefin, polyester, and polyamide fibers.

120. The composite of Claim 119, wherein the polyester fibers are polyethylene terephthalate fibers.

121. The composite of Claim 115, wherein the matrix fibers comprise cellulosic fibers.

122. The composite of Claim 116, wherein the resilient fibers are present in the composite in an amount from about 5 to about 65 percent by weight of the total composite.

123. The composite of Claim 116, wherein the matrix fibers are present in the composite in an amount from about 8 to about 75 percent by weight of the total composite.

124. The composite of Claim 115, wherein the absorbent material is a superabsorbent material.

125. The composite of Claim 115, wherein the absorbent material is present in an amount from about 2 to about 80 percent by weight of the total composite.

126. The composite of Claim 116 further comprising a wet strength agent.

127. The composite of Claim 126, wherein the wet strength agent is a resin selected from the group consisting of polyamide-epichlorohydrin and polyacrylamide resins.

128. The composite of Claim 126, wherein the wet strength agent is present in the composite in an amount from about 0.01 to about 2 percent by weight of the total composite.

129. The composite of Claim 115, wherein the composite is formed by a wetlaid process.

130. The composite of Claim 115, wherein the composite is formed by a foam process.

131. The composite of Claim 115 having a basis weight from about 50 to about 900 g/m².

132. The composite of Claim 115 having an unrestrained vertical wicking height of from about 5 to about 30 cm.

133. An absorbent composite comprising a core and first and second fibrous strata, the core and strata being integrally formed;

wherein the core is intermediate the first and second strata;

wherein the first and second strata are coextensive with opposing surfaces of the core,

wherein the core comprises a fibrous matrix and absorbent material,

wherein the fibrous matrix defines voids and passages between voids distributed substantially throughout the matrix,

wherein the absorbent material is located within some of the voids; and

wherein the absorbent material located within the voids is expandable into the voids, and

wherein the composite has a demand absorbency of from about 15 to about 35 mL/g.

134. The composite of Claim 133, wherein the fibrous matrix comprises fibers selected from the group consisting of resilient fibers, matrix fibers, and mixtures thereof.

135. The composite of Claim 134, wherein the resilient fibers are present in the composite in an amount from about 5 to about 65 percent by weight of the total composite.

136. The composite of Claim 134, wherein the matrix fibers are present in the composite in an amount from about 8 to about 75 percent by weight of the total composite.

137. The composite of Claim 133, wherein the absorbent material is a superabsorbent material.

138. The composite of Claim 133, wherein the absorbent material is present in an amount from about 2 to about 80 percent by weight of the total composite.

139. The composite of Claim 133 further comprising a wet strength agent.

140. The composite of Claim 139, wherein the wet strength agent is a resin selected from the group consisting of polyamide-epichlorohydrin and polyacrylamide resins.

141. The composite of Claim 139, wherein the wet strength agent is present in the composite in an amount from about 0.01 to about 2 percent by weight of the total composite.

142. The composite of Claim 133, wherein the composite is formed by a wetlaid process.

143. The composite of Claim 133, wherein the composite is formed by a foam process.

144. The composite of Claim 133 having a basis weight from about 50 to about 900 g/m².

145. The composite of Claim 133 having an unrestrained vertical wicking height of from about 5 to about 30 cm.

146. The composite of Claim 133, wherein the core and strata are formed from a common fiber furnish.

147. The composite of Claim 133, wherein the core and one stratum are formed from a common fiber furnish.

148. The composite of Claim 133, wherein the core and strata are formed from different fiber furnishes.

149. The composite of Claim 133, wherein the first and second strata are formed from a common fiber furnish.

150. The composite of Claim 133, wherein the first and second strata are formed from different fiber furnishes.

151. The composite of Claim 133, wherein the core and the stratum have different basis weights.

152. The composite of Claim 133, wherein the first stratum and the second stratum have different basis weights.

153. The composite of Claim 133, wherein the first and second strata have a common basis weight.

154. An absorbent composite comprising a core and at least one fibrous stratum, wherein the at least one fibrous stratum and a surface of the core are coextensive, wherein the composite has a demand absorbency of from about 15 to about 35 mL/g and an unrestrained vertical wicking height from about 5 to about 30 cm.

155. The composite of Claim 154, wherein the absorbent material is present in an amount from about 2 to about 80 percent by weight based on the total weight of the composite.

156. The composite of Claim 154, wherein the fibrous matrix comprises crosslinked cellulosic fibers in an amount from about 5 to about 65 percent by weight based on the total weight of the composite.

157. The composite of Claim 154, wherein the fibrous matrix comprises matrix fibers in an amount from about 8 to about 75 percent by weight based on the total weight of the composite.

180. An absorbent article incorporating the composites of Claim 115, 133, or 154.

GER:md